

REMARKS

Claims 7, 8, 19, and 24 have been amended. Claim 25 has been cancelled. Claims 26 – 35 have been added. Hence, claims 1 - 24 and 26 – 35 are pending in the Application.

The corrected drawings incorporate corrections that fix informal errors to the drawings identified in the parent case. No new matter has been added.

SUMMARY OF REJECTIONS/OBJECTIONS

Claims 7, 19, and 24 were objected because it is alleged they introduce matter by using the term “cell”. The claims have been amended to remove the alleged new matter. Applicant notes however the term cell is well known in the art. It is the intersection between a column and the row of a table. Thus, a cell is simply a field in a row of a table. These concepts were disclosed in the application.

Claims 1 - 24 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,809,297, issued to David M. Kroenke, et al., herein *Kroenke*. These rejections are traversed.

DESCRIPTION OF CITED ART

Because the cited art is based on *Kroenke*, a description of *Kroenke* is useful. The following are excerpts from *Kroenke*.

Transformation of Semantic Objects into Relational Tables

As described above, the present invention is a system that allows a user to create a semantic object data model that represents data to be stored in a database. The system then transforms the model into one or more of a set of commands that are interpreted by a conventional database program to create a plurality of relational database tables that correspond to the semantic object data model. (col. 27, line 63 to col. 28, line 4)

The particular table definitions produced by the present invention can be tailored to a particular database protocol determined based upon the user's election of a specific



commercial database program with which the present invention will be used. Given the following description of how the semantic object model is transformed into a number of relational tables, it is considered to be within the skill of a computer programmer to create a driver for any of the commercially available relational database programs that will produce the appropriate set of commands that cause that database to create corresponding relational database tables for the desired schema. (col. 28, line 32 – 43)

CLAIMS 1, 16, AND 20

Claims 1, and 20 recite:

reading data from one or more rows of the set of one or more tables;
generating an object id based on values from said one or more rows; and
presenting data from said one or more rows as an object having said object id.

Claim 16 recites:

said processor configured to read data from one or more rows of the set of one or more tables;
said processor configured to generate an object id based on values from said one or more rows; and
said processor configured to present data from said one or more rows as an object having said object id.

Claims 1, 16, and 20 recite a system that allows relational data (i.e. data extracted from a relational database) to be presented as objects, and in particular, as objects having an object id. The art cited by the examiner fails to teach anything about presenting data in relational tables as objected oriented data.

Kroenke and the system cited by claims 1, 16, and 20 differ in at least two fundamental ways. *Kroenke* teaches about transforming something in the object oriented paradigm to something in the relational paradigm. The claims recite a system for transforming something in

one paradigm to something in the object oriented paradigm.

Even more, *Kroenke* teaches that the conversion between the object or relation paradigms is made at the data structure level, not at the data level. Specifically, *Kroenke* teaches that object oriented definitions of semantic objects are converted into definitions of relational tables. *Kroenke* discusses nothing about how the data that is actually stored in the tables is converted and presented as data from another paradigm.

Claims 1, 16, and 20, recite a system that presents data that is already stored under one paradigm as data in the other paradigm. In particular, the claims recite a system for presenting data stored in the tables of a database as objects with object ids.

As shown above, *Kroenke* fails to disclose or suggest all the limitations of claims 1, 16, and 20. Therefore, these claims are patentable. Reconsideration of claims 1, 16, and 20 is respectfully requested.

CLAIM 7, 19, AND 24

Claims 7 and 24 recite:

reading a first set of data from one or more fields of a plurality rows from a set of one or more tables;
generating a column object based on said first set of data; and
presenting a second set of data from said set of one or more tables as said object that has said column object as an attribute.

Claim 19, recites:

said processor configured to read a first set of data from
a plurality of rows from the set of one or more tables;
said processor configured to generate a column object based on said first set of data; and

said processor configured to represent a second set of data from said set of one or more tables as said object that has said column object as an attribute.

Claim 7 has been amended to incorporate the limitations of cancelled claim 25. If the Examiner issues new grounds of rejections, they cannot not have been necessitated by the amendment to claim 7 because the combination of limitations in claim 7 had been presented earlier as claim 25. For similar reasons, new grounds of rejections cannot be necessitated by the amendments to claims 24 and 19.

Claims 7, 24, and 19 recite a system that allows relational data (i.e. data extracted from a relational database) to be presented as object oriented data, and in particular, as an object that has a column object as an attribute. As discussed earlier, *Kroenke* fails to make obvious any system that allows data stored in rows of tables of a database to be presented as object oriented data. Reconsideration and allowance of claims 7, 24, and 19 is respectfully requested.

DEPENDENT CLAIMS

The claims not yet discussed are dependent claims, each of which depend (directly or indirectly) on one of the claims discussed above. Each of the claims is therefore allowable for the reasons given above for the claim on which it depends. In addition, each of the dependent claims introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time.

It is respectfully requested that the Examiner reconsider all of the pending claims, which are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.



The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,

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MARKED-UP CLAIMS

- 1 1. (Not Amended) A method for presenting data from a set of one or more tables as a set of
2 objects, the method comprising the steps of:
3 reading data from one or more rows of the set of one or more tables;
4 generating an object id based on values from said one or more rows; and
5 presenting data from said one or more rows as an object having said object id.
- 1 2. (Not Amended) The method of Claim 1, wherein the step of generating an object id
2 based on values includes generating an object id based on values from one or more rows
3 of a relational table that belongs to the set of one or more tables.
- 1 3. (Not Amended) The method of Claim 1, further comprising the step of
2 generating a reference to the object based on the object id.
- 1 4. (Not Amended) The method of Claim 3, further comprising the step of accessing the
2 object based on the reference generated for the object.
- 1 5. (Not Amended) The method of Claim 1, wherein:
2 the method further includes the steps of:
3 receiving a request to define a view, said request specifying one or more columns
4 of the set of one or more tables containing values used to generate said
5 object id;



6 in response to receiving the request to define the view, storing specification data
7 that specifies the one or more columns; and
8 the step of generating an object id based on values from said one or more rows includes
9 determining how to generate the object id by inspecting said specification data.

1 6. (Not Amended) The method of Claim 5, wherein the step of receiving a request to define
2 a view includes receiving a request that specifies the one or more columns as including at
3 least one column from a relational table.

1 7. (Amended) [A method for presenting, as an object data from a set of one or more tables
2 residing in one or more databases, the method comprising the steps of:
3 reading a first set of data from a plurality of cells from the set of one or more tables;
4 wherein said plurality of cells includes a cell from each of a plurality of rows;
5 generating a column object based on said first set of data; and
6 presenting a second set of data from said set of one or more
7 tables as said object that has said column object as an attribute.]

8 A method for presenting, as an object, data from a set of one or more tables residing in
9 one or more databases, the method comprising the steps of:
10 reading a first set of data from one or more fields of a plurality rows from a set of one or
11 more tables;
12 generating a column object based on said first set of data; and
presenting a second set of data from said set of one or more tables as said object that has
said column object as an attribute.

1 8. (Amended) The method of Claim 7, wherein the step of reading a first set of data [from
2 one or more rows] includes reading data from one or more rows of at least one relational
3 table.

1 9. (Not Amended) The method of Claim 7, wherein the step of generating a column object
2 includes generating a collection object.

1 10. (Not Amended) The method of Claim 9, wherein the step of generating a collection
2 object includes generating said collection object as a list of elements belonging to a single
3 data type.

1 11. (Not Amended) The method of Claim 9, wherein the step of generating a collection
2 object includes generating said collection object as a nested table.

1 12. (Not Amended) The method of Claim 9, wherein the step of generating a column object
2 includes generating a column object belonging to a user specified object type.

1 13. (Not Amended) The method of Claim 9, where the step of generating a column object
2 includes generating a column object that is a reference to another object.

1 14. (Not Amended) The method of Claim 13, wherein the step of generating a column object
2 includes generating a column object that is a reference to an object presented by an object
3 view.

1 15. (Not Amended) The method of Claim 13, wherein the step of generating a column object
2 includes generating a column object that is a reference to an object residing in a database.

1 16. (Not Amended) A computer system, comprising:
2 a processor;
3 a memory coupled to said processor;
4 a set of one or more tables, said set of one or more tables containing one or more rows;
5 said processor configured to read data from one or more rows of the set of one or more
6 tables;
7 said processor configured to generate an object id based on values from said one or more
8 rows; and
9 said processor configured to present data from said one or more rows as an object having
10 said object id.

1 17. (Not Amended) The computer system of Claim 16, wherein said values from said one or
2 more rows includes values from one or more rows of a relational table that belongs to
3 said set of one or more tables.

1 18. (Not Amended) The computer system of Claim 16, further comprising:
2 said processor configured to receive a request to define a view, said request specifying
3 one or more columns of the set of one or more tables containing values used to
4 generate said object id;

5 said processor configured to respond to receiving the request to define the view by storing
6 specification data that specifies the one or more columns; and
7 said processor configured to generate the object id based on values from said one or more
8 rows by determining how to generate the object id by inspecting said specification
9 data.

1 19. (Amended) A computer system, comprising:
2 a processor;
3 a memory coupled to said processor;
4 one or more databases;
5 a set of one or more tables contained in said one or more databases;
6 said processor configured to read a first set of data [from a plurality of cells] from
7 [one or more] a plurality of rows from the set of one or more tables;
8 [wherein said plurality of cells includes a cell from each of a plurality of rows;]
9 said processor configured to generate a column object based on said first set of
10 data; and
11 said processor configured to represent a second set of data from said set of one or more
12 tables as said object that has said column object as an attribute.

1 20. (Not Amended) A computer-readable medium carrying one or more sequences of one or
2 more instructions for presenting data from a set of one or more tables as a set of objects,
3 wherein the execution of the one or more sequences of the one or more instructions
4 causes the one or more processors to perform the steps of:



5 reading data from one or more rows of the set of one or more tables;
6 generating an object id based on values from said one or more rows; and
7 presenting data from said one or more rows as an object having said object id.

1 21. (Not Amended) The computer readable medium Claim 20, wherein the step of
2 generating an object id based on values includes generating an object id based on values
3 from one or more rows of a relational table that belongs to the set of one or more tables.

1 22. (Not Amended) The computer readable medium of Claim 21, wherein:
2 the one or more sequences of instructions includes one or more instructions for
3 performing the steps of:
4 receiving a request to define a view, said request specifying one or more columns
5 of the set of one or more tables containing values used to generate said
6 object id;
7 in response to receiving the request to define the view, storing specification data
8 that specifies the one or more columns; and
9 the step of generating an object id based on values from said one or more rows includes
10 determining how to generate the object id by inspecting said specification data.

1 23. (Not Amended) The computer readable medium of Claim 22, wherein the step of
2 receiving a request to define a view includes receiving a request that specifies the one or
3 more columns as including at least one column from a relational table.

1 24. (Amended) A computer-readable medium carrying one or more sequences of one or more
2 instructions for presenting, as an object, data from a set of one or more tables residing in
3 one or more databases, wherein the execution of the one or more sequences of the one or
4 more instructions causes the one or more processors to perform the steps of:
5 [reading a first set of data from a plurality of cells from the set of one or more tables;
6 wherein said plurality of cells includes a cell from each of a plurality of rows
7 generating a column object based on said first set of data; and
8 presenting a second set of data from said set of one or more tables as said object that has
9 said column object as an attribute.]

10 reading a first set of data from one or more fields of a plurality rows from a set of one or

11 more tables;

12 generating a column object based on said first set of data; and

13 presenting a second set of data from said set of one or more tables as said object that has

14 said column object as an attribute.

1 25. (Cancelled) A computer-readable medium for presenting, as an object, data from a set of
2 one or more tables residing in one or more databases, the method comprising the steps of:
3 reading a first set of data from one or more fields of a plurality rows from a set of one or
4 more tables;
5 generating a column object based on said first set of data; and
6 presenting a second set of data from said set of one or more tables as said object that has
7 said column object as an attribute.

1 26. (New) The computer-readable medium of Claim 24, wherein the step of reading a first
2 set of data includes reading data from one or more rows of at least one relational table.

1 27. (New) The computer-readable medium of Claim 24, wherein the step of generating a
2 column object includes generating a collection object.

1 28. (New) The computer-readable medium of Claim 27, wherein the step of generating a
2 collection object includes generating said collection object as a list of elements belonging
3 to a single data type.

1 29. (New) The computer-readable medium of Claim 27, wherein the step of generating a
2 collection object includes generating said collection object as a nested table.

1 30. (New) The computer-readable medium of Claim 27, wherein the step of generating a
2 column object includes generating a column object belonging to a user specified object
3 type.

1 31. (New) The computer-readable medium of Claim 27, wherein the step of generating a
2 column object includes generating a column object that is a reference to another object.

1 32. (New) The computer-readable medium of Claim 31, wherein the step of generating a
2 column object includes generating a column object that is a reference to an object
3 presented by an object view.

1 33. (New) The computer-readable medium of Claim 31, wherein the step of generating a
2 column object includes generating a column object that is a reference to an object
3 residing in a database.

1 34. (New) The computer-readable medium of Claim 20, the steps further
2 comprising the step of generating a reference to the object based on the
3 object id.

1 35. (New) The computer-readable medium of Claim 34, wherein the steps further comprise
2 the step of accessing the object based on the reference generated for the object.

